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EXAMINER	
MISLEH, JUSTIN P	

ART UNIT	PAPER NUMBER
2612	

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/400,549	NODA, HIROSHI	
	Examiner	Art Unit	
	Justin P Misleh	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 11 and 15 - 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 11 and 15 - 18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 August 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 30 August 2004 have been fully considered but they are not persuasive.

2. In response to the rejections using Sakai et al., the Applicant argues, "Applicant has found nothing in Sakai et al. that would teach or suggest correcting noise in each of a plurality of signal from the plurality of pixels by using the plurality of signals accumulated in each pixel of the plurality of pixels during a plurality of different time periods, respectively, as recited in claim 1." Furthermore, the Applicant argues, "Applicant has found nothing in Sakai et al. that would teach or suggest storing noise information of each pixel of the plurality of pixels for noise independent from accumulation time and noise information of each pixel for noise dependent upon the accumulation time and correcting noise ... by using the noise information." The Applicant supports the above argument by stating, "Apparently, Sakai et al. teaches that noise captured in a solid-state image pickup element is captured during both closed shutter and open shutter states as a whole frame in a non-exposure state."

The Examiner completely disagrees with the Applicant's position and believes Sakai et al. completely anticipates amended independent Claims 1 and 7. Initially, turning to the Applicant's interpretation of Sakai et al., the Applicant admits that Sakai et al. corrects noise in a signal output from a pixel in accordance with noise information obtained from the pixel during two or more arbitrary different accumulation times. In accordance with figures 1 and 2 and column 4 (line 29) – column 5 (line 49), Sakai et al. disclose an image processing apparatus that

at least includes a shutter (2) and a photoelectric conversion unit (3) which includes a plurality of pixels. Furthermore, Sakai et al. disclose that when a user operates a release button, the shutter (2) is opened and the plurality of pixels of the photoelectric unit (3) captures an image of the subject that has passed through the lens (1) and the opened shutter (2). After the image of the subject has been captured, the shutter (2) is closed, such that light passing through the lens does not pass through the shutter (2) to the photoelectric conversion unit (3); hence, allowing the photoelectric conversion unit (3) to capture a dark image that represents noise. The noise capturing operation, while the shutter is closed, is repeated two or more arbitrary times such that a plurality of dark images are captured so that an averaged dark image can be calculated to represent the average noise of the photoelectric conversion unit (3). The averaged dark image is subtracted the subject image to produce a final image with reduced noise. Clearly, while the shutter is opened Sakai et al. captures a single subject image, at a particular time period, and while the shutter is closed Sakai et al. captures a plurality of noise images, at a plurality of particular time periods, respectively.

As stated above, the Applicant is concerned with the operation of Sakai et al. on a pixel-by-pixel basis and whether Sakai et al. stores noise information. As admitted by the Applicant, noise information is found within an accumulation period dependent signal (i.e. subject image) and noise information is found within the co-called accumulation period independent signal (i.e. dark images). As stated in column 4 (lines 19 – 59), both the subject image and the dark images are stored in memory/memories. Lastly, Sakai et al. disclose, as stated in column 10 (lines 63 – 66), that the calculation is performed on a pixel-by-pixel basis.

Turning to amended Claims 1 and 7, the claim language recites, therein, "correcting noise in each of a plurality of signals from the plurality of pixels by using the plurality signals accumulated in each pixel of the plurality of pixels during a plurality of different time periods, respectively." In the Examiner's interpretation, the claim language simply requires that there is a plurality of pixels and that each pixel within that plurality accumulate a plurality of signals during a plurality of different time periods, respectively, wherein the plurality of signals accumulated during the plurality of different time periods are used to correct for noise in each pixel of the plurality of pixels, respectively. The claim language is written broadly enough that it does not require that the noise correction be performed on a strictly time period-by-time period basis. In other words, the claim language does not require that ONLY the plurality of signals accumulated by a particular pixel be the ONLY plurality of signals used to correct the noise in that particular pixel. In conclusion, given the Examiner's above interpretations of Sakai et al. and the amended claim language, independent Claims 1 and 7 are completely anticipated by Sakai et al. Because the Applicant believes independent Claims 15 and 17 are patentable over Sakai et al. for at least the same reasons as discussed above in connection with Claim 1, the Examiner's response is equally applicable to independent Claims 15 and 17.

3. In response to the rejections using Kiri et al., the Applicant argues, "Applicant has also found nothing in Kiri et al. that would teach or suggest correcting noise in each of a plurality of signal from the plurality of pixels by using the plurality of signals accumulated in each pixel of the plurality of pixels during a plurality of different time periods, respectively, as recited in claim 10."

The Examiner ONLY relied upon Kiri et al. to teach the distance measuring deficiency of Sakai et al. as recited in Claims 10 and 11. Kiri et al. was not relied upon for noise correction as implied by the Applicant.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 1 – 9 and 15 – 18** are rejected under 35 U.S.C. 102(e) as being anticipated by Sakai et al.

6. For **Claims 1, 15, and 17**, Sakai et al. disclose, as shown in figures 1 and 2 and as stated in column 4 (line 29) – column 5 (line 49), an image processing apparatus and a corresponding method, and a storage medium storing a program (inherent within the camera control circuit 10) comprising:

a photoelectric conversion unit (3) including a plurality of pixels; and

a noise correction device (the entire circuit of figures 1 and 2) correcting noise in each correcting noise in each of a plurality of signals from the plurality of pixels by using the plurality signals accumulated in each pixel of the plurality of pixels during a plurality of different time periods, respectively (see below for explanation).

In the Examiner's interpretation, the claim language simply requires that there is a plurality of pixels and that each pixel within that plurality accumulate a plurality of signals during a plurality of different time periods, respectively, wherein the plurality of signals accumulated during the plurality of different time periods are used to correct for noise in each pixel of the plurality of pixels, respectively. The claim language is written broadly enough that it does not require that the noise correction be performed on a strictly pixel-by-pixel basis or any particular plurality of pixels. In other words, the claim language does require that ONLY the plurality of signals accumulated by a particular pixel be the ONLY plurality of signals used to correct the noise in that particular pixel.

Sakai et al. disclose an image processing apparatus that at least includes a shutter (2) and a photoelectric conversion unit (3) which includes a plurality of pixels. Furthermore, Sakai et al. disclose that when a user operates a release button, the shutter (2) is opened and the plurality of pixels of the photoelectric unit (3) captures an image of the subject that has passed through the lens (1) and the opened shutter (2). After the image of the subject has been captured, the shutter (2) is closed, such that light passing through the lens does not pass through the shutter (2) to the photoelectric conversion unit (3); hence, allowing the photoelectric conversion unit (3) to capture a dark image that represents noise. The noise capturing operation, while the shutter is closed, is repeated two or more arbitrary times such that a plurality of dark images are captured so that an averaged dark image can be calculated to represent the average noise of the photoelectric conversion unit (3). The averaged dark image is subtracted the subject image to produce a final image with reduced noise. Clearly, while the shutter is opened Sakai et al. captures a single subject image, at a particular time period, and while the shutter is closed Sakai et al. captures a

plurality of noise images, at a plurality of particular time periods, respectively. Lastly, Sakai et al. disclose, as stated in column 10 (lines 63 – 66), that the calculation is performed on a pixel-by-pixel basis.

7. For **Claim 7**, Sakai et al. disclose, as shown in figures 1 and 2 and as stated in column 4 (line 29) – column 5 (line 49), an image processing apparatus and a corresponding method, and a storage medium storing a program (inherent within the camera control circuit 10) comprising:

a photoelectric conversion unit (3) including a plurality of pixels;

storage means (memories 81 and 82) for storing noise information of a pixel independent from an accumulation time and noise information of a dependent upon the accumulation time; and

a noise correction device (the entire circuit of figures 1 and 2) correcting noise in each correcting noise in each of a plurality of signals from the plurality of pixels by using the plurality signals accumulated in each pixel of the plurality of pixels during a plurality of different time periods, respectively (see below for explanation).

In the Examiner's interpretation, the claim language simply requires that there is a plurality of pixels and that each pixel within that plurality accumulate a plurality of signals during a plurality of different time periods, respectively, wherein the plurality of signals accumulated during the plurality of different time periods are used to correct for noise in each pixel of the plurality of pixels, respectively. The claim language is written broadly enough that it does not require that the noise correction be performed on a strictly pixel-by-pixel basis or any particular plurality of pixels. In other words, the claim language does require that ONLY the

plurality of signals accumulated by a particular pixel be the ONLY plurality of signals used to correct the noise in that particular pixel.

Sakai et al. disclose an image processing apparatus that at least includes a shutter (2) and a photoelectric conversion unit (3) which includes a plurality of pixels. Furthermore, Sakai et al. disclose that when a user operates a release button, the shutter (2) is opened and the plurality of pixels of the photoelectric unit (3) captures an image of the subject that has passed through the lens (1) and the opened shutter (2). After the image of the subject has been captured, the shutter (2) is closed, such that light passing through the lens does not pass through the shutter (2) to the photoelectric conversion unit (3); hence, allowing the photoelectric conversion unit (3) to capture a dark image that represents noise. The noise capturing operation, while the shutter is closed, is repeated two or more arbitrary times such that a plurality of dark images are captured so that an averaged dark image can be calculated to represent the average noise of the photoelectric conversion unit (3). The averaged dark image is subtracted the subject image to produce a final image with reduced noise. Clearly, while the shutter is opened Sakai et al. captures a single subject image, at a particular time period, and while the shutter is closed Sakai et al. captures a plurality of noise images, at a plurality of particular time periods, respectively. Lastly, Sakai et al. disclose, as stated in column 10 (lines 63 – 66), that the calculation is performed on a pixel-by-pixel basis.

8. As for **Claim 2**, Sakai et al. disclose, wherein said noise correction device calculates noise correction information corresponding to a predetermined accumulation time (subject image time) by using the plurality of signals (subject image and dark images) accumulated during the plurality of different time periods, respectively, and corrects the noise in each of the plurality

signals from each of the plurality of pixels by using a result of the calculation (The subject image always corrected).

9. As for **Claim 3**, Sakai et al. disclose an image processing apparatus according to Claim 1, further comprising storage means (memories 81 and 82) for storing the noise information.

10. As for **Claims 4 and 7**, while Sakai et al. do not disclose the physical details of the components of the image processing apparatus, it is inherent that the components are comprised of circuits to operate the camera. More specifically, while Sakai et al. disclose an accumulation time for the photoelectric conversion device, Sakai et al. is silent with regards to a counter or some other means for counting the accumulation time of the photoelectric conversion unit. However; it is inherent to Sakai et al. to have a counter, clocking means, or some other means to count the accumulation time of the photoelectric conversion unit, otherwise, it would be impossible for Sakai et al. to disclose an image capturing process, much less an accumulation time for the unit.

11. As for **Claim 5**, Sakai et al. disclose an image processing apparatus according to Claim 1, wherein said noise correction means includes calculation means for calculating noise information dependent upon the accumulation time (see below for further information) and noise information independent from the accumulation time (see below for further information), in accordance with the noise information of the pixel obtained during two or more arbitrary different accumulation times.

The Examiner interprets the claim language in the following manner, the calculation of noise information wherein that calculation is both dependent upon the accumulation time and independent of the accumulation time. Sakai et al. disclose the calculation of noise information

using the summing circuits (7 and 71), the memories (8, 81, and 82), the N-bit shift circuit (5), and the sign inversion circuit (6). Furthermore, Sakai et al. disclose the calculation of noise information that satisfies the requirements as interpreted by the Examiner. The calculation of noise information, in Sakai et al., is dependent upon accumulation time in the respect that the noise data captured by the solid-state image pickup element (3) is captured according to the operation mode of the camera and can either be long or short, as set forth in the above rejections. The calculation of noise information, in Sakai et al., is independent from accumulation time in the respect that the noise data captured by the solid-state image pickup element (3) is calculated into noise information by downshifting to the lower digits by an arbitrary number of bits (set by the camera control circuit 10) and it inverted to an opposite sign, also as set forth in the above rejections. Furthermore, the output of the memory (8), or rather the image data, is subtracted by the noise data.

12. As for **Claims 6 and 8**, Sakai et al. disclose an image processing apparatus according to Claim 5, wherein said noise correction means calculates the difference (summing circuit 7) between a noise signal dependent upon the accumulation time in the signal output from the pixel and noise signal independent from the accumulation in the signal from the pixel.

13. As for **Claims 16 and 18**, Sakai et al. disclose calculation means for calculating noise information dependent upon the accumulation time (see below for further information) and noise information independent from the accumulation time (see below for further information), in accordance with the noise information of the pixel obtained during two or more arbitrary different accumulation times; and means for calculating the difference between a noise signal

dependent upon the accumulation time in the signal output from the pixel and noise signal independent from the accumulation in the signal from the pixel.

The Examiner interprets the claim language in the following manner, the calculation of noise information wherein that calculation is both dependent upon the accumulation time and independent of the accumulation time. Sakai et al. disclose the calculation of noise information using the summing circuits (7 and 71), the memories (8, 81, and 82), the N-bit shift circuit (5), and the sign inversion circuit (6). Furthermore, Sakai et al. disclose the calculation of noise information that satisfies the requirements as interpreted by the Examiner. The calculation of noise information, in Sakai et al., is dependent upon accumulation time in the respect that the noise data captured by the solid-state image pickup element (3) is captured according to the operation mode of the camera and can either be long or short, as set forth in the above rejections. The calculation of noise information, in Sakai et al., is independent from accumulation time in the respect that the noise data captured by the solid-state image pickup element (3) is calculated into noise information by downshifting to the lower digits by an arbitrary number of bits (set by the camera control circuit 10) and it inverted to an opposite sign, also as set forth in the above rejections. Furthermore, the output of the memory (8), or rather the image data, is subtracted by the noise data.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

15. **Claims 10 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai et al. in view of Kiri et al.

16. For **Claim 10**, Sakai et al. disclose, as shown in figures 1 and 2 and as stated in column 4 (line 29) – column 5 (line 49), an image processing apparatus and a corresponding method, and a storage medium storing a program (inherent within the camera control circuit 10) comprising:

a photoelectric conversion unit (3) including a plurality of pixels; and

a noise correction device (the entire circuit of figures 1 and 2) correcting noise in each correcting noise in each of a plurality of signals from the plurality of pixels by using the plurality signals accumulated in each pixel of the plurality of pixels during a plurality of different time periods, respectively (see below for explanation).

In the Examiner's interpretation, the claim language simply requires that there is a plurality of pixels and that each pixel within that plurality accumulate a plurality of signals during a plurality of different time periods, respectively, wherein the plurality of signals accumulated during the plurality of different time periods are used to correct for noise in each pixel of the plurality of pixels, respectively. The claim language is written broadly enough that it does not require that the noise correction be performed on a strictly pixel-by-pixel basis or any particular plurality of pixels. In other words, the claim language does require that ONLY the plurality of signals accumulated by a particular pixel be the ONLY plurality of signals used to correct the noise in that particular pixel.

Sakai et al. disclose an image processing apparatus that at least includes a shutter (2) and a photoelectric conversion unit (3) which includes a plurality of pixels. Furthermore, Sakai et al.

disclose that when a user operates a release button, the shutter (2) is opened and the plurality of pixels of the photoelectric unit (3) captures an image of the subject that has passed through the lens (1) and the opened shutter (2). After the image of the subject has been captured, the shutter (2) is closed, such that light passing through the lens does not pass through the shutter (2) to the photoelectric conversion unit (3); hence, allowing the photoelectric conversion unit (3) to capture a dark image that represents noise. The noise capturing operation, while the shutter is closed, is repeated two or more arbitrary times such that a plurality of dark images are captured so that an averaged dark image can be calculated to represent the average noise of the photoelectric conversion unit (3). The averaged dark image is subtracted the subject image to produce a final image with reduced noise. Clearly, while the shutter is opened Sakai et al. captures a single subject image, at a particular time period, and while the shutter is closed Sakai et al. captures a plurality of noise images, at a plurality of particular time periods, respectively. Lastly, Sakai et al. disclose, as stated in column 10 (lines 63 – 66), that the calculation is performed on a pixel-by-pixel basis.

However, Sakai et al. do not disclose a distance measurement calculation means for performing a distance measurement calculation in accordance with a signal corrected by said noise correction means. On the other hand, Kiri et al. also disclose a digital electronic camera including an image processing apparatus. As shown in figure 2, the image processing apparatus of Kiri et al. includes an automatic focusing apparatus (30) with a distance measurement calculation means (34) for performing a distance measurement calculation. As stated in column 1 (lines 66 and 67) and 2 (lines 1 – 3), at the time the invention was made, one with ordinary skill in the art would have been motivated to include the distance measurement calculation

means (34) for performing a distance measurement calculation, as taught by Kiri et al., in accordance with a signal corrected by the noise correction means, of Sakai et al., so as to "provide an object detection mechanism in an imaging device with automatic focusing wherein the mechanism is capable of reliably detecting an object to be focused with a simple structure." Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art include the distance measurement calculation means (34) for performing a distance measurement calculation, as taught by Kiri et al., in accordance with a signal corrected by the noise correction means, of Sakai et al.

17. For **Claim 11**, Sakai et al. disclose, as shown in figures 1 and 2 and as stated in column 4 (line 29) – column 5 (line 49), an image processing apparatus and a corresponding method, and a storage medium storing a program (inherent within the camera control circuit 10) comprising:

a photoelectric conversion unit (3) including a plurality of pixels;

storage means (memories 81 and 82) for storing noise information of a pixel independent from an accumulation time and noise information of a dependent upon the accumulation time; and

a noise correction device (the entire circuit of figures 1 and 2) correcting noise in each correcting noise in each of a plurality of signals from the plurality of pixels by using the plurality signals accumulated in each pixel of the plurality of pixels during a plurality of different time periods, respectively (see below for explanation).

In the Examiner's interpretation, the claim language simply requires that there is a plurality of pixels and that each pixel within that plurality accumulate a plurality of signals during a plurality of different time periods, respectively, wherein the plurality of signals

accumulated during the plurality of different time periods are used to correct for noise in each pixel of the plurality of pixels, respectively. The claim language is written broadly enough that it does not require that the noise correction be performed on a strictly pixel-by-pixel basis or any particular plurality of pixels. In other words, the claim language does require that ONLY the plurality of signals accumulated by a particular pixel be the ONLY plurality of signals used to correct the noise in that particular pixel.

Sakai et al. disclose an image processing apparatus that at least includes a shutter (2) and a photoelectric conversion unit (3) which includes a plurality of pixels. Furthermore, Sakai et al. disclose that when a user operates a release button, the shutter (2) is opened and the plurality of pixels of the photoelectric unit (3) captures an image of the subject that has passed through the lens (1) and the opened shutter (2). After the image of the subject has been captured, the shutter (2) is closed, such that light passing through the lens does not pass through the shutter (2) to the photoelectric conversion unit (3); hence, allowing the photoelectric conversion unit (3) to capture a dark image that represents noise. The noise capturing operation, while the shutter is closed, is repeated two or more arbitrary times such that a plurality of dark images are captured so that an averaged dark image can be calculated to represent the average noise of the photoelectric conversion unit (3). The averaged dark image is subtracted the subject image to produce a final image with reduced noise. Clearly, while the shutter is opened Sakai et al. captures a single subject image, at a particular time period, and while the shutter is closed Sakai et al. captures a plurality of noise images, at a plurality of particular time periods, respectively. Lastly, Sakai et al. disclose, as stated in column 10 (lines 63 – 66), that the calculation is performed on a pixel-by-pixel basis.

However, Sakai et al. do not disclose a distance measurement calculation means for performing a distance measurement calculation in accordance with a signal corrected by said noise correction means. On the other hand, Kiri et al. also disclose a digital electronic camera including an image processing apparatus. As shown in figure 2, the image processing apparatus of Kiri et al. includes an automatic focusing apparatus (30) with a distance measurement calculation means (34) for performing a distance measurement calculation. As stated in column 1 (lines 66 and 67) and 2 (lines 1 – 3), at the time the invention was made, one with ordinary skill in the art would have been motivated to include the distance measurement calculation means (34) for performing a distance measurement calculation, as taught by Kiri et al., in accordance with a signal corrected by the noise correction means, of Sakai et al., so as to "provide an object detection mechanism in an imaging device with automatic focusing wherein the mechanism is capable of reliably detecting an object to be focused with a simple structure." Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art include the distance measurement calculation means (34) for performing a distance measurement calculation, as taught by Kiri et al., in accordance with a signal corrected by the noise correction means, of Sakai et al.

Conclusion

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

19. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Justin P Misleh whose telephone number is 703.305.8090. The Examiner can normally be reached on Monday through Thursday from 7:30 AM to 5:30 PM and on alternating Fridays from 7:30 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wendy R Garber can be reached on 703.305.4929. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JPM
January 5, 2005

WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600